AMENDMENT AND RESPONSE UNDER 37 CFR § 1.116 – EXPEDITED PROCEDURE

Serial Number: 10/055,876 Filing Date: January 23, 2002

Title: METHODS, FUNCTIONAL DATA, AND SYSTEMS FOR IMAGE FEATURE TRANSLATION

Page 2 Dkt: H0002808.34359

IN THE CLAIMS

Please amend the claims as follows.

 (Previously Presented) A method of processing an image, comprising: receiving one or more sub images within an image; separating each sub image from the image; associating a template with each sub image;

using one or more feature vectors associated with each template to locate one or more features within each of the sub images each feature represented by three pixel coordinates from the sub image being examined, wherein each of the feature vectors is represented as a collection of three pixel coordinates for each sub image, wherein a first pixel coordinate represents a center or origin of the sub image being examined, a second pixel coordinate represents an edge coordinate along a x-axis extending eastward or westward from the origin, and a third pixel coordinate represents a different edge coordinate along a y-axis extending northward or southward from the origin, and wherein each sub image graphically representing an instrument that has a visual reading captured and depicted within the sub image, and a geometric shape for each instrument also reflected in each of the feature vectors to which it relates along with its coverage attributes within the image, wherein the geometric shape and the coverage attributes are derivable from the three pixel coordinates associated with the sub image being examined and defined in the sub image's feature vector; and

processing one or more rules associated with one or more of the located features acquired from each of the feature vectors to derive a particular visual reading for a particular sub image representing a particular instrument depicted in the image, wherein each located feature is acquired by comparing the three pixel coordinates identified in the particular sub image to each of the feature vectors and each feature vector's three pixel coordinates.

2. (Original) The method of claim 1 further comprising calculating an instrument reading from one or more of the located features using one or more of the associated rules.

Dkt: H0002808.34359

- 3. (Original) The method of claim 2 further comprising electronically transmitting the instrument reading.
- 4. (Original) The method of claim 3 wherein the instrument reading is associated with one of the sub images, which represents a picture of an instrument panel.
- 5. (Original) The method of claim 1 further comprising, periodically repeating all the steps.
- 6. (Original) The method of claim 5 wherein a period to repeat the steps is customizable.
- 7. (Previously Presented) A method of converting an instrument reading to digital information storage on a computer readable medium, comprising:

receiving an electronic image of an instrument having one or more image features necessary for resolving an instrument reading;

isolating each image feature within the image by comparing three pixel coordinates of each isolated image to its own feature vector, wherein each feature vector is a collection of at least three pixel coordinates for each isolated image, wherein a first pixel coordinate represents an origin coordinate for the isolated image being examined, a second pixel coordinate represents an eastward or westward coordinate extending from the origin coordinate, and a third pixel coordinate representing a northward or southward coordinate extending from the origin coordinate, and each isolated image representing a graphical symbol, and a shape for each graphical symbol also reflected in the feature vector to which it relates along with its coverage attributes within the electronic image, wherein the graphical symbol and the coverage attributes for any given isolated image is derivable from the corresponding at least three pixel coordinates defined in the given isolated image's feature vector:

mapping or calculating each isolated image feature to its own value using each feature's at least three sampled coordinates, the value associated with each isolated image feature's orientation within the image; and

determining the instrument reading by performing a calculation on the values in response to each isolated image's feature vector.

Title:

Dkt: H0002808.34359

- 8. (Original) The method of claim 7 further comprising calibrating the isolating step one time before capturing the image.
- 9. (Original) The method of claim 8 further comprising determining an degree of angular orientation associated with calibrating and using the angular orientation in isolating each image feature.
- 10. (Original) The method of claim 7, wherein the instrument is a control panel.
- 11. (Original) The method of claim 10 wherein the control panel is associated with at least one of an aircraft, a marine vehicle, and a land vehicle.
- 12-29. (Cancelled).